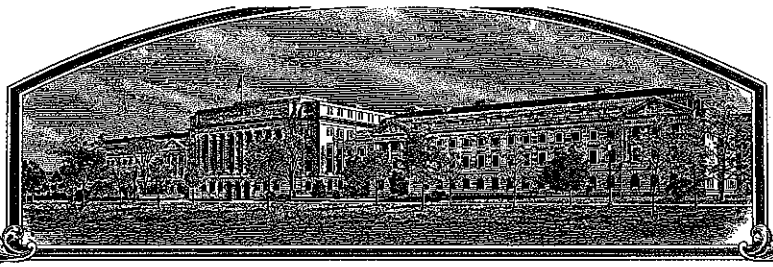
No. 200300161



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Rutgers, The State University of New Jersey

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Gremlin'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fifth day of March, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

statement.)statement.)statement.)**REPRODUCE LOCALLY. *Include form number and date on all reproductions*** Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
The State University of New Jersey
Rutgers University - Cook College
~~c/o Dr. William Meyer~~ (BT: 8/4/2006)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
P58

3. VARIETY NAME
Gremlin (BT: 8/4/2006)

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
Foran Hall
Plant Biology & Pathologhy Dept.
59 Dudley Road
New Brunswick, NJ
08901

5. TELEPHONE *(Include area code)*
732 - 932 - 9711 ext. 160

6. FAX *(Include area code)*
732 - 932 - 9441

FOR OFFICIAL USE ONLY

PVPO NUMBER
200300161

FILING DATE
February 13, 2003

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Government Institution

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers.)*
Dr. William Meyer c/o Rutgers University - Cook College
Foran Hall
Plant Biology & Pathology Dept.
59 Dudley Road
New Brunswick, NJ
08901

FEES RECEIVED
FILING AND EXAMINATION FEES: $ 2705.00 DATE 2/13/03
CERTIFICATION FEE: $ 768.00 DATE 2/5/2007

11. TELEPHONE *(Include area code)*
732 - 932 - 9711 ext. 160

12. FAX *(Include area code)*
732 - 932 - 9441

13. E-MAIL

14. CROP KIND *(Common Name)*
Tall Fescue

15. GENUS AND SPECIES NAME OF CROP
Festuca arundinacea

16. FAMILY NAME *(Botanical)*
Poaceae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 20 and 21 below)* ☒ NO *(If "no", go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO THE NUMBER OF CLASSES? ☐ YES ☐ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. ☐ FOUNDATION ☐ REGISTERED ☐ 5 CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES?
☐ YES ☒ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with applicaiton and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER: Keith R Cooper
NAME *(Please print or type)*: Keith R Cooper
CAPACITY OR TITLE: Dean of Research
DATE: 1/30/03

SIGNATURE OF OWNER
NAME *(Please print or type)*
CAPACITY OR TITLE
DATE

S&T-470 (07-01) designed by the Plant Variety Protection Office with WordPerfect 9.0 Replaces STD-470 (04-01) which is obsolete. *(See reverse for instructions and information collection burden statement.)*

Exhibit A:

Origin and Breeding History
Gremlin
<P58 Tall Fescue
(BT: 8/4/2006)

Gremlin
<P58 tall fescue (*Festuca arundinacea* Schreb.) is a medium low-growing, medium-dark green, medium-fine-leaved, turf-type tall fescue selected from the maternal progenies of 25 clones. P58 was (BT: 8/4/2006)
selected ~~from~~ for semi-dwarf growth habit, dark green color, and medium-late maturity. Approximately 92% of the parental germplasm in P58 contain the Neotyphodium endophyte.

The parental germplasm of P58 tall fescue traces its origin to plants selected from old turfs of the United States in a germplasm collection program initiated in 1962, to plants selected from or related to Rebel tall fescue (Funk et al., 1981). Attractive clones were selected from old turfs in Birmingham, AL; Athens, Atlanta, and Millegeville, GA; Preston, ID; Baltimore, MD; Bayonne, Jersey City, Elizabeth, Princeton, and Cape May, NJ; eastern North Carolina; Philadelphia, PA; Nashville, TN; Lexington, KY; Cincinnati, OH; Dallas, TX; and northern Mississippi. The tall fescue plants selected from old turfs were of unknown origin. All were large patches of turf surviving in stressful environments indicating that they had persisted and developed over a period of many years.

A few hundred attractive, turf-type plants were collected and established in spaced-plant nurseries and/or frequently mowed clonal evaluation trials at Rutgers University. All but a few dozen of the most promising plants were quickly discarded. The best selections were very different from any tall fescue variety in existence at the time of collection. They produced lower-growing turfs with finer leaves, greater density, darker color, and greater tolerance of close mowing.

The most promising plants were identified by their persistence and appearance in old turfs and their performance in spaced-plant nurseries, mowed clonal evaluation tests, and single-plant progeny trials under turf maintenance. Intercrosses of the best performing plants were subjected to varying cycles of phenotypic and genotypic selection depending on their date of collection. New sources of germplasm were added to the breeding program as it became available from the continuing collection program. Each cycle of selection showed continued progress in producing lower-growing, darker

green, attractive plants with improved turf performance scores. Selection was also effective in maintaining high seed yields and good stress tolerance. Substantial progress was made in developing tall fescues with finer leaves, a lower growth profile, increased persistence under close mowing, and increased density.

Large numbers of single-plant progenies were seeded in turf evaluation trials at the Plant Science Research Farm at Adelphia, NJ in 1995 and 1996. The plants selected for progeny evaluation were selected from spaced-plant nurseries at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm selected from old turfs and germplasm selected from or related to Rebel tall fescue.

Six hundred plants were selected from the best performing turf plots from the 1995 and 1996 tall fescue trials at Adelphia. Sixty-one single plot progenies were selected from 2,085 plots from 21 different populations in these two trials. These plants were established in two spaced-plant nurseries at Adelphia. These plants were allowed to interpollinate in the nursery. Seed harvested from the plants with the best floret fertility and appearance at the time of harvest was used to establish turf plots in the fall of 1998 at Adelphia. After two years of evaluation for disease resistance and stress tolerance, 25 of these plots were identified with better performance. Breeder seed form the plants that produced these turf plots was sent to Advanta Seeds Pacific for inclusion in a Plant Variety Protection (PVP) morphological nursery.

Diagram of Origin and Breeding History of P58 Tall Fescue

1962 - 1994: Germplasm collection, evaluation, and genetic improvement.

1995 - 1996: Planted single-plant progenies of plants selected from current cycles of population improvement programs in closely mowed turf trials at Adelphia and North Brunswick, NJ.

1997: Planted 600 selected plants from the 1995 and 1996 trials in isolated spaced-plant nurseries in the fall of 1997.

1998: Planted harvested plants in single-plot progeny turf plots at Adelphia, NJ.

1998 - 2000: Evaluated plots for disease resistance, stress tolerance and turf performance.

2000: Twenty-five plots were selected with improved performance and seed from the plants that produced these turf plots was sent to Advanta Seeds Pacific for inclusion in a PVP morphological nursery.

Each plant of 'Gremlin' (ex: 12/8/2006) P58 traces at least 20 percent of its ancestral germplasm to plants selected from old turf areas of the United States as part of a germplasm collection program initiated in 1962.

2. Breeder Seed Maintenance:

Breeder seed is maintained by Rutgers University. Seed propagation is limited to three generations, one each of foundation, registered, and certified.

3. Stability and Uniformity:

P58 has been a stable uniform cultivar over two generations. No off-type or variant plants have been observed during the multiplication or reproduction. Turf plots of P58 have been uniform and stable. (BT:8/4/2006)

References

1. Buckner, Robert C., Jerrell B. Powell, and Rod V. Frakes. 1979. Historical Development, in Buckner, Robert C., and Lowell P. Bush (editors) tall fescue. Agronomy Monograph 20. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Inc., Publisher. Madison, WI, pages 1 - 8.

2. Funk, C. R., R. E. Engel, W. K. Dickson, and R. H. Hurley. 1981. Registration of Rebel tall fescue. Crop Science 21:632.

Exhibit B:
Novelty Statement of 'Gremlin' (P58) Tall Fescue
(BT:8/4/2006)

The following summary outlines the distinctive characteristics of 'Gremlin' (P58) (BT:8/4/2006). The novelty of P58 is based on the unique combination of theses characteristics. P58 is most similar to Rebel II, but may be differentiated by using the following criteria:

1. The genetic color of P58 is darker compared to Rebel II (tables 1A, 1B).
2. P58 has a mature plant height at least 29 cm shorter than Rebel II (tables 1A, 1B).
3. The flag leaf characteristics for P58; height, length, width, sheath length and internode length are all less compared to Rebel II (tables 1A, 1B).
4. The panicle length is at least 14 cm shorter for P58 compared to Rebel II (tables 1A, 1B).
5. The leaf blade characteristics for P58; height, length, sheath length and width are all less compared to Rebel II (tables 1A, 1B).
6. P58 has a shorter distance between the two lower most whorls compared to Rebel II (tables 2A, 2B).
7. The length of the panicle form the lower most whorl to the apex is shorter for P58 than Rebel II (tables 2A, 2B, illus. 1).
8. P58 has a lemma and palea length that is less than Rebel II (tables 2A, 2B).
9. P58 produces more florets per spikelet compared to Rebel II (tables 2A, 2B).
10. P58 produces fewer plants with purple pigmentation in the panicle than Rebel II (tables 3A, 3B).
11. P58 has a lower seed weight compared to Rebel II (tables 3A, 3B).

*<P58> is 'Gremlin' (BT:8/4/2006; per applicant's authorization).

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY PROGRAM
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT C
(TALL & MEADOW FESCUES)

OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Rutgers, ~~The~~ the State University of New Jersey ~~Cook College~~ ~~c/o Dr. William Meyer~~ (PT: 8/4/2006)	P58	Gremlin (PT: 8/4/2006)

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)
Foran Hall
Plant Biology & Pathology Dept.
59 Dudley Road
New Brunswick, NJ 08901

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PVPO NUMBER
20030016 1

Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

__X__ 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II

7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark

24 = Kenhy 25 = AU Triumph 26 = Fawn 27 = Cajun

_____ 2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Comtessa 33 = Ensign 34 = Trader

* 2. CYTOLOGY:

____42____ Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

__2__Transition Zone __2__West __2__ Northeast _____ Other (Specify):_____

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

__7__ Maturity Class 1 = Very early ( ) 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)

4. MATURITY: (continued)

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6 = Bonanza 7 = Late (Silverado) 8 = ( ) 9 = Very late

Date Headed _40.67 days after April 1,_____ Location ____Albany, OR_____

_____ Days earlier than ____
Maturity same as __6__
_____Days later than ____
} Comparison Variety

---

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten)

_105.83_ cm Height

_29.14_ cm Shorter than _6_
Height same as ___
__ __.__ cm Taller than ___
} Comparison Variety

* INTERNODE LENGTH CM: (First internode subtending the flag leaf)

_13.63_ cm InternodeLength

_6.64_ cm Shorter than _6_
Length same as ___
__ __.__ cm Longer than ___
} Comparison Variety

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

_36.00_ cm Height

_20.20_ cm Shorter than _6_
Height same as ___
__ __.__ cm Taller than ___
} Comparison Variety

---

* 6. GROWTH HABIT: (Mature Plants)

_8_ 1 = Prostrate ( ) 3 = Semiprostrate ( ) 5 = Horizontal ( )

7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

---

* 7. RHIZOMES (Psuedo):

__ __.__ mm Length _1_1 = Absent ( ) 2 = Rare (Rebel) 3 = Common ( )

---

* 8. LEAF BLADE: (Tiller leaves/ turf color)

*_7_ Color: 1 = Light green ( ) 3 = Medium light green ( ) 5 = Green ( )

7 = Medium dark green ( ) 9 = Very dark green ( )

__5__ Specify rating of comparison variety

*_1_ Anthocyanin: 1 = Absent ( ) 9 = Present ( )

*_1_ Basal Hairs: 1 = Absent ( ) 9 = Present ( )

*_1_ Margins: 1 = Smooth ( ) 5 = Semi-rough ( ) 9 = Rough ( )

8. LEAF BLADE: (continued)

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*_6_Width Class: 1 = Very coarse ( ) 3 = Coarse ( ) 5 = Medium ( )
7 = Fine ( ) 9 = Very Fine ( )

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

_38.23_ cm Tiller Leaf Length

_10.80_ cm Shorter than _6_
Length same as ___
__ __.__ cm Taller than ___
} Comparison Variety

* TILLER LEAF WIDTH MM:

_7.27_ mm Tiller Leaf Width

_1.23_ mm Narrower than_6_
Width same as ___
__.__ mm Longer than ___
} Comparison Variety

FLAG LEAF LENGTH CM:

_39.~~97~~ 33 cm Flag Leaf Length
(DT: 8/4/2006)

_11.97_ cm Shorter than _6_
Length same as ___
__.__ cm Longer than ___
} Comparison Variety

FLAG LEAF WIDTH MM:

_5.75_ mm Flag Leaf Width

1.05_ mm Narrower than _6_
Width same as ___
__.__ mm Wider than ___
} Comparison Variety

---

* 9. LEAF SHEATH: (Basal Portion)

*_1_ Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ( )

*_9_ Auricle Hairiness: 1 = Absent ( ) 9 = Present ( )

---

* 10. PANICLE: (At seed maturity except where noted.)

*_1_ Shape: 1 = Narrow-tapering ( ) 5 = Ovate ( ) 7 = Oblong ( ) 9 = Other (specify)

*_5_ Type: 1 = Compact (appressed) 5 = Intermediate ( ) 7 = Open ( ) 9 = Other (specify)

*_9_ Orientation: 1 = Nodding ( ) 9 = Erect ( )

*___ Branch Pubescence: 1 = Glabrous ( ) 9 = Pubescent ( )

*_1_ Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6= Other (Specify)

*_1_ Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6= Other (Specify)

*__69.0_ cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)

_14.40_ cm Shorter than _6_
Length same as ___
__.__ cm Longer than ___
} Comparison Variety

* 11. SEED: (With Lemma & Pelea)

*__1941__ mg per 1000 seeds

__602__ mg Less than _6_
Weight same as ___
___ ___ ___ mg More than ___
} Comparison Variety

PALEA: (Keels or Margins) _5_ Hairs: 1 = Absent ( ) 5 = Short (Missouri 96) 9 = Long ( )

LEMMA: _9_ Hairs: 1 = Absent (Kenhy) 5 = Several ( ) 9 = Many (Missouri 96)

_5.41_ mm Lemma Length (Mature) (BT: 8/4/2006)

_0.29_ mm Shorter than _6_
Length same as ___
__.__ mm Longer than ___
} Comparison Variety

_1.52_ mm Lemma Width

__.__ mm Narrower than ___
Width same as _6_
__.__ mm Wider than ___
} Comparison Variety

*AWNS: _9_ AWNS: 1 = Absent ( ) 9 = Present (Falcon) _100_% Plants with awns

_2.01_ mm Awn length (Of those present.)

_0.23_ mm Shorter than _6_
Length same as ___
__.__ mm Longer than ___
} Comparison Variety

12. DISEASE, INSECT, AND NEMATODE REACTION: (0= Not Tested 1= Least Resistant 9= Most Resistant)

_0_ Melting-out *Drechslera poae*
_0_ Leaf Spot *D. siccans*
_0_ Net Blotch *D. dictyoides*
_0_ Brown Patch *Rhizoctonia solani*
_0_ C. Leaf Spot *Cercospora fectucae*
_0_ Pink Snow Mold *Gerlachia nivalis*
_0_ Silver Top *F. tricinctum, F. roseum*
_0_ Other Disease _____
_0_ Other Insect _____
_0_ Other Nematode _____

_0_ Blind Seed *Gloeotinia temulenta*
_0_ Dollar Spot *Lanzia, Mollerdiscus* spp.
_0_ Stem Rust *Puccinia graminis*
_0_ T. Blight *Typhula incarnata*
_0_ Pythium Blight *Pythium* spp.
_0_ Powdery Mildew *Erysiphe graminis*
_0_ Crown Rust *Puccinia coronata*

13. ENVIRONMENTAL STRESS

_6_ Drought Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )

___ Shade Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )

13. ENVIRONMENTAL STRESS: (continued)

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_6_ Winter Stress 1 = Susceptible ( ) 5 = Tolerant ( ) 9 = Resistant ( )

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	Rebel II	1	Leaf Color	Rebel II	3
Panicle Color	Rebel II	2	Panicle Shape	Rebel II	1
Seed Size	Rebel II	1	Cold Injury	Rebel II	2
Winter Color	Rebel II	3	Heat	Rebel II	2
Disease	Rebel II	3			

* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

A morphological nursery designated 00PVPFA was established in September 2000, in Albany, Oregon. Experimental design consisted of 18 entries; 3 replications per entry; 20 plants per replication; for a total of 60 plants per entry. KY-31, Rebel II and Plantation were used as a standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nursery received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2001 and 2002. The fertilizer source was 15 - 15 - 15 and was applied as a split application with ½ applied in the spring and ½ in the autumn. The nursery was sprayed twice each spring, 3 weeks between applications, with Tilt (2oz/acre rate), to prevent stem rust. One pound of Karmex per acre rate was applied during the late summer to prevent emergence of volunteer seedlings.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed.

Exhibit D:

Additional Description

P58 Tall Fescue

P58 is an improved turf-type tall fescue. It has a shorter mature plant height (tables 1A, 1B) than previously released tall fescue cultivars, such as KY-31, Rebel II, and Plantation. P58 has a late maturity with a heading date later than KY-31 (tables 1A, 1B). P58 exhibits a darker genetic color compared to KY-31 and Rebel II (tables 1A, 1B). The length of the panicle is shorter for P58 compared to KY-31, Rebel II, and Plantation (tables 1A, 1B). The flag leaf characteristics; height, sheath length and internode length are all shorter for P58 compared to KY-31, Rebel II, and Plantation (tables 1A, 1B). The leaf blade characteristics; length, width, height, and sheath length are shorter for P58 compared to KY-31 and Rebel II (tables 1A, 1B). P58 has more florets per spikelet compared to Rebel II and Plantation (tables 2A, 2B). P58 has a longer spikelet length compared to Plantation (tables 2A, 2B). The distance between the two lower most whorls is shorter for P58 compared to KY-31 and Rebel II (tables 2A, 2B, illus. 1) The length of the panicle from the lower most whorl to the apex is shorter for P58 compared to KY-31 and Rebel II (tables 2A, 2B, illus. 1) P58 expressed fewer purple pigmentation of the panicles compared to Rebel II (tables 3A, 3B). P58 expresses a higher frequency of plants with only one main branch of the lower most whorl compared to KY-31, Rebel II, and Plantation (tables 3A, 3B, illus. 1). The milligram weight of 1,000 seeds of P58 is less compared to KY-31, Rebel II and Plantation (tables 3A, 3B). P58 has an erect growth habit compared to KY-31, Rebel II and Plantation (tables 4A, 4B). P58 produces a higher frequency of plants with smooth leaf blade margins compared to Plantation, but less than KY-31 and Rebel II (tables 4A, 4B). The production of dark pigmentation at the nodes is less frequent in P58 compared to KY-31, but more than Plantation (tables 4A, 4B).

Table 1A

2001 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
'Gremlin'	40.67	62.00	5.35	81.93	14.83	65.93	32.60	6.28	36.00	20.13	13.63	25.77	8.22	12.77	10.93
KY-31	30.67	59.67	3.17	125.73	18.40	91.93	50.53	8.58	63.83	30.80	23.20	43.13	10.13	27.37	17.47
Rebel II	34.33	61.00	3.68	113.23	22.13	85.87	46.57	7.92	56.20	28.03	20.27	38.37	9.65	22.33	16.90
Plantation	40.33	63.33	5.28	93.97	18.57	72.97	39.87	6.80	44.07	24.13	16.23	34.77	9.12	17.80	14.13
LSD (.05)	1.95	1.37	0.36	6.90	1.68	4.89	2.92	0.94	4.50	2.00	1.77	2.89	0.79	2.38	1.55
C.V.	3.62	1.58	5.27	5.58	6.96	5.00	5.77	10.18	8.03	6.58	8.48	6.89	6.67	11.28	9.17

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

(ET:8/4/2006)

(ET:8/4/2006)

Table 1B

2002 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
Gremlin ZP587	23.67	62.67	5.58	105.83	24.80	69.00	39.33	5.75	61.27	24.97	23.87	38.23	7.27	29.57	15.47
KY-31	12.00	58.00	3.38	150.07	24.60	93.03	57.10	7.47	92.70	35.67	32.03	54.03	9.85	49.90	22.83
Rebel II	20.67	62.00	4.32	134.97	24.90	83.40	51.30	6.80	81.80	32.27	31.23	49.03	8.50	42.70	19.90
Plantation	28.33	64.00	5.58	116.37	24.70	75.17	43.97	6.47	67.03	27.73	27.27	42.27	8.15	31.53	17.47
LSD (.05)	3.21	1.42	0.24	5.03	1.16	4.66	2.54	0.61	3.67	1.14	1.45	2.44	0.65	2.79	0.88
C.V.	4.13	1.62	3.33	3.24	3.40	4.60	4.25	7.02	4.09	3.12	4.10	4.31	6.07	6.38	3.87

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

(ET:8/4/2006)

(ET:8/4/2006)

Table 2A

2001 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Whorl	Spikelets per Panicle	Length of Spike From Lower Most Whorl to Tip (mm)
'Gregun' (PI 586)	5.46	1.52	2.01	6.41	1.46	4.77	7.47	12.97	86.10	49.00	14.98	86.00	19.30
KY-31	6.16	1.56	2.15	7.28	1.49	5.77	6.77	13.80	115.03	61.87	15.10	110.00	27.20
Rebel II	5.75	1.49	2.24	6.99	1.40	5.11	5.80	12.30	100.60	58.53	15.00	101.00	24.33
Plantation	5.47	1.51	2.07	6.48	1.35	4.71	6.08	11.80	96.93	54.80	19.23	119.33	22.57
LSD(.05)	0.27	0.08	0.19	0.21	0.08	0.25	0.75	0.89	14.06	5.72	2.69	9.92	2.09
C.V.	3.53	3.66	6.55	2.26	4.00	3.62	8.13	5.13	10.51	7.76	11.99	7.65	7.04

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.
■ Significant difference over two years one location.
■ Significant difference over one year one location.

(BT: 8/4/2006)

(BT: 8/4/2006)

Table 2B

2002 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm)	Number of Spikelets on the Longest Whorl	Spikelets per Panicle	Length of Spike From Lower Most Whorl to Tip (mm)
Gremlin' CP58	6.60	1.40	0.91	6.15	1.19	4.89	5.63	11.13	90.00	55.83	18.90	103.00	23.80
KY-31	7.23	1.37	0.89	6.98	1.23	5.23	4.88	11.43	98.40	64.57	15.80	114.67	30.13
Rebel II	6.92	1.43	1.34	6.68	1.26	5.12	4.93	11.57	100.43	61.90	16.08	102.67	27.00
Plantation	6.59	1.30	0.80	6.28	1.12	4.64	4.28	9.87	78.77	50.20	16.13	98.33	22.07
LSD(.05)	0.31	0.09	0.21	0.20	0.06	0.31	0.55	0.64	11.42	5.58	2.81	10.71	2.14
C.V.	3.42	5.07	15.21	2.28	3.87	4.66	8.02	4.30	9.95	7.65	13.49	8.42	6.75

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

(BT: 8/4/2006)

(ET: 8/4/2006)

Panicle Type Inflorescence

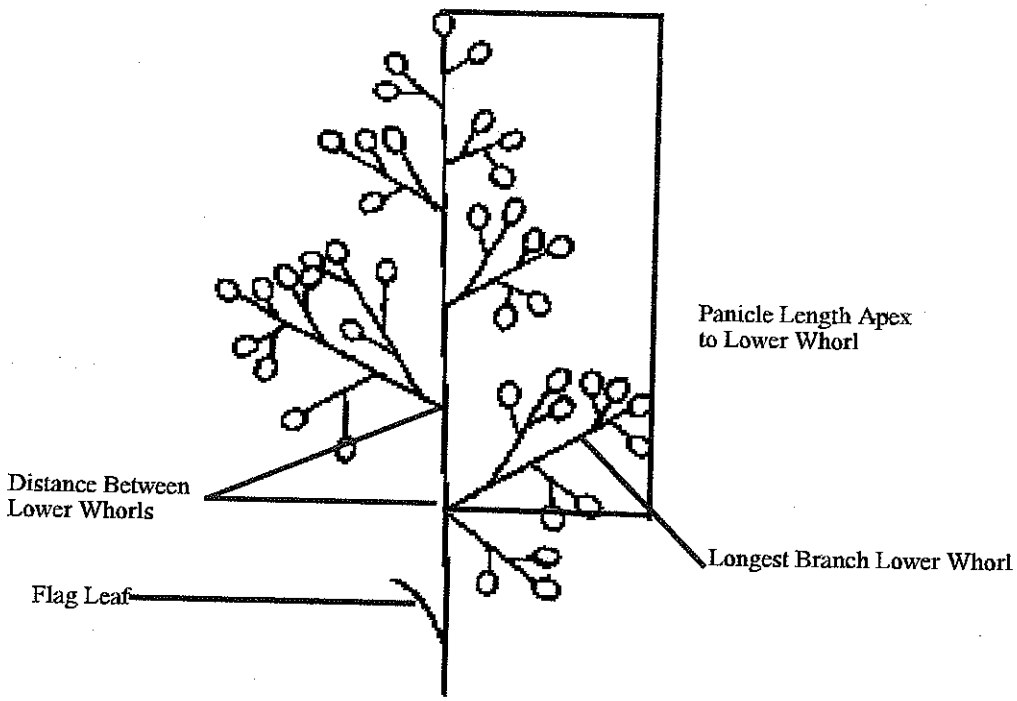

Illustration 1.

200301-1

(CBT:8/4/2006)

Table 3A

2001 Additional Morphological Measurements of the Panicle

Cultivar	Anther Color % Purple	Panicle Color % Purple	Lemma Hairs % Present	Palea Hairs % Present	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Ovate	Panicle Type % Open	Branch Lower Whorl =1	Branch Lower Whorl =2	Branch Lower Whorl =3	Branch Lower Whorl =4	Seed Weight mg/1,000 Seeds
'Gremlin' 258	0	12	97	100	100	0	0	83	17	23	23	77	0	1941
KY-31	0	7	97	100	100	0	12	82	18	10	10	82	8	3345
Rebel II	0	15	98	98	100	0	10	83	17	13	13	87	0	2543
Plantation	0	10	98	100	100	0	0	78	22	13	13	83	4	2584

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

Table 3B

2002 Additional Morphological Measurements of the Panicle

Cultivar	Anther Color % Purple	Panicle Color % Purple	Lemma Hairs % Present	Palea Hairs % Present	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Ovate	Panicle Type % Open	Branch Lower Whorl =1	Branch Lower Whorl =2	Branch Lower Whorl =3	Branch Lower Whorl =4	Seed Weight mg/1,000 Seeds
'Gremlin' 258	2	17	95	100	100	3	0	20	80	37	60	3	0	1937
KY-31	5	13	97	100	100	3	0	2	98	23	73	3	0	3348
Rebel II	5	30	98	100	100	10	0	23	77	28	72	0	0	2562
Plantation	7	30	98	100	100	2	0	38	62	35	63	2	0	2596

(BT:8/4/2006)

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

200300161

Table 4A 2001 Additional Morphological Measurements of the Leaf Blade

Cultivar	Growth Habit at Anthesis % Prostrate	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Erect	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Present	Rhizomes % Present	Node Color % Distinct
'Gremlin' PI586	2	50	48	0	47	30	23	95	87	0	15
KY-31	40	50	10	0	70	15	15	80	92	0	48
Rebel II	10	77	13	0	83	12	5	87	85	0	13
Plantation	7	63	30	0	40	32	28	82	87	0	2

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

Table 4B 2002 Additional Morphological Measurements of the Leaf Blade

Cultivar	Growth Habit at Anthesis % Prostrate	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Erect	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Sheath Auricle Hairs % Present	Rhizomes % Present	Node Color % Distinct
'Gremlin' PI586	2	50	48	0	52	21	27	92	97	0	15
KY-31	40	50	10	0	75	13	12	80	77	0	40
Rebel II	10	77	13	0	77	13	10	87	92	0	23
Plantation	7	63	30	0	34	17	49	88	88	0	8

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.
■ Cultivar under evaluation.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (*7 U.S.C. 2421*). The information is held confidential until the certificate is issued (*7 U.S.C. 2426*).

1. NAME OF APPLICANT(S)
Rutgers, ~~The State University~~ The University of New Jersey
(BT: 8/4/2006)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
P58

3. VARIETY NAME
Gremlin
(BT: 8/4/2006)

4. ADDRESS (*Street and No., or R.F.D. No., City, State, and Zip, and Country*)
Foran Hall
Plant Biology & Pathology
59 Dudley Road
New Brunswick, NJ 08901

5. TELEPHONE (*Include area code*)
732 - 932 - 9711 ext. 160

6. FAX (*Include area code*)
732 - 932 - 9441

7. PVPO NUMBER
20030161

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.**

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.**

☒ YES ☐ NO

10. Is the applicant the original owner? **If no, please answer one of the following:**

☒ YES ☐ NO

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☒ YES ☐ NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☒ YES ☐ NO **If no, give name of country**

11. Additional explanation on ownership *(If needed, use the reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.